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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,574	12/19/2001	Jack Brass	16224.00046	1008

7590 03/03/2004

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EXAMINER
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BARTH, VINCENT P

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/021,574		BRASS, JACK	
	<b>Examiner</b>		<b>Art Unit</b>	
	Vincent P. Barth		2877	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4,6-12,15,17-19,23 and 25-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,6-12,15,17-19,23 and 25-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Preliminary Comments***

1. Applicant has argued in the Remarks to the Amendment dated 20 January 2004 and through the course of a demonstration during the interview dated 29 October 2003, that the instant invention has unexpected results over the prior art. A discussion pertaining thereto is set forth below in the section entitled Comments.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4, 6, 7, 12, 15, 19, 23, 25, 26, 30 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalley, et al., U.S. Pat. No. 6,590,220 (8 Jul. 2003).

4. Referring to Claims 1 and 25, Kalley discloses that a lamp in the form of a flashlight may be used to detect leaks in, *inter alia*, fluid systems, such as air conditioning units (col. 1, ln. 15; col. 1, ln. 22; col. 1, lns. 45-62). Kalley does not explicitly use the term "fault", however, it is clear from the context of the instant Application that the term "fault" as used in the instant claim is consistent with the type of defects detected in Kalley, in which fluorescent materials are used

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to identify defects in a variety of contexts. Kalley discloses that the lighting source should be in the form of LED's, which may emit in the UV range (i.e. below 400 nm), as well as in the visible range (i.e. 400 to 500 nm) (see col. 1, lns. 50-52; col. 2, lns. 3-5; col. 4, lns. 28-30; col. 4, lns. 54-56). Applicant has argued in the Remarks to the Amendment dated 20 January 2004 that the Kalley reference transmits a "broad bandwidth radiation" (Remarks at pg. 12, last paragraph). However, the Examiner respectfully disagrees, since the Kalley reference states that, "An LED light source can have a *narrow* spectral output ..." (col. 4, lns. 54-56, emphasis added). Therefore, Kalley explicitly provides for particular narrow bandwidths *within* the broader illustrative ranges in the visible and UV spectra. Accordingly, Applicant has claimed a particular range of 395-415 nm, however, such range falls within the range already set forth in Kalley. See MPEP §2144.05, (In the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a prima facie case of obviousness exists), citing In re Wertheim, 541 F.2d 257, 191USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.Cir. 1990). Applicant has argued in the Remarks to the Amendment dated 20 January 2004 and through the course of the demonstration during the interview of 29 October 2003, that the instant invention has unexpected results over the Kalley reference. The Examiner appreciates the efforts made by Applicant and Counsel in this regard, however, having carefully considered the arguments and demonstrative evidence presented, such secondary evidence of unexpected results has not been sufficient to overcome the Kalley reference. A further discussion of the secondary evidence is set forth below in the section entitled Comments. Now continuing the discussion concerning the spectral range, it should also be emphasized that particular fluorescent dyes may require a particular spectral range. Therefore, those practicing the Kalley invention would likely

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expect that the spectral output of the lighting device (and thus the particular LED's) would be selected depending on which dye is present, and would thus be somewhat variable. Note also, that although Kalley discloses embodiments in which filters are used in connection with the generation of light of the desired wavelength to fluoresce leak detection fluids, Kalley also explicitly discloses that the LED's may be selected to have a narrow spectral output, so as to avoid the need for filters (col. 4, lns. 54-56; col. 8, lns. 13-33). Kalley discloses that the LED's can be of a type in which the angle light emitted forms an angle of +/- 35 degrees, or less, as is desirable by those practicing the invention (col. 8, lns. 33-41). See MPEP §2144.05, (In the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a prima facie case of obviousness exists), citing In re Wertheim, 541 F.2d 257, 191USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.Cir. 1990). Moreover, Applicants do not disclose that the particular range provides a new and unexpected result over the prior art, thus the range claimed is a non-critical limitation. The MPEP §2144.05(III) states that, "the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP §716.02 - §716.02(g) for a discussion of criticality and unexpected results. Accordingly, the modification claimed over the prior art would have been obvious to those skilled in the art at the time of the invention. Continuing now with the discussion of the Kalley reference, Kalley discloses that the LED's may be a single LED, or an array (col. 8, ln. 54). Applicant has amended the claim to include language in which the radiation from the LED is visually distinguishable from the excited luminescent material. However, Applicant has already set forth the limitation that the LED emits in range of 395nm to

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415nm, thereby providing the functional limitations of the device. Applicant has not claimed any particular dye compound, but rather a lighting device. Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. See MPEP§2114, citing In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). “[A]pparatus claims cover what a device *is*, not what a device *does*.” Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (emphasis in original).

Accordingly, the language set forth relating to the dye does not provide an additional functional limitation to the device.

5. Referring to Claims 4 and 6, Kalley discloses that the device comprises a housing (Fig. 7), and that the open end has at least one LED disposed such that the light emits outward. Kalley discloses that the LED's may be a single LED, or an array (col. 8, ln. 54), without limitation as the number of LED's. Therefore, those practicing the Kalley invention would expect to have additional LED's numbering at least 20, as might be necessary to cause the particular fluorescent dye to fluoresce. See MPEP §2144.04(VI)(B), citing, In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (mere duplication of parts has no patentable significance unless a new and unexpected result is produced.)

6. Referring to Claim 7, Kalley discloses all of the claimed features, and but does not explicitly disclose that the voltage of the power supply is higher than the rated voltage of the LED's. However, Kalley implies that the power supply can deliver a voltage higher than the rated LED voltage, since the disclosure states that a 6V power source may be used for a 4.5V lamp (col. 7, lns. 4-6).

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7. Referring to Claim 12, Kalley discloses that the unit is powered by a battery 28 (see Figure 1, and col. 6, ln. 67).

8. Referring to Claims 15, 19 and 23, 26, 30 and 34, Kalley discloses that a lamp in the form of a flashlight may be used to detect leaks in, *inter alia*, fluid systems, such as air conditioning units (col. 1, ln. 15; col. 1, ln. 22; col. 1, lns. 45-62). Kalley does not explicitly use the term “fault”, however, it is clear from the context of the instant Application that the term “fault” as used in the instant claim is consistent with the type of defects detected in Kalley, in which fluorescent materials are used to identify defects in a variety of contexts. Kalley discloses that the lighting source should be in the form of LED’s, which may emit in the UV range (i.e. below 400 nm), as well as in the visible range (i.e. 400 to 500 nm) (see col. 1, lns. 50-52; col. 2, lns. 3-5; col. 4, lns. 28-30; col. 4, lns. 54-56). Applicant has claimed a particular range of 395-415 nm, however, such range falls within the range already set forth in Kalley. See MPEP §2144.05, (In the case where the claimed ranges ‘overlap or lie inside ranges disclosed by the prior art’ a prima facie case of obviousness exists), citing In re Wertheim, 541 F.2d 257, 191USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.Cir. 1990). It should also be emphasized that particular fluorescent dyes may require a particular spectral range. Therefore, those practicing the Kalley invention would likely expect that the spectral output of the lighting device (and thus the particular LED’s) would be selected depending on which dye is present, and would thus be somewhat variable. Note also, that although Kalley discloses embodiments in which filters are used in connection with the generation of light of the desired wavelength to fluoresce leak detection fluids, Kalley also explicitly discloses that the LED’s may be selected to have a narrow spectral output, so as to avoid the need for filters (col. 4, lns. 54-56; col. 8, lns. 13-

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33). Kalley discloses that the LED's can be of a type in which the angle light emitted forms an angle of +/- 35 degrees, or less, as is desirable by those practicing the invention (col. 8, lns. 33-41). See MPEP §2144.05, (In the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a prima facie case of obviousness exists), citing In re Wertheim, 541 F.2d 257, 191USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed.Cir. 1990). Moreover, Applicants do not disclose that the particular range provides a new and unexpected result over the prior art, thus the range claimed is a non-critical limitation. The MPEP §2144.05(III) states that, "the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP §716.02 - §716.02(g) for a discussion of criticality and unexpected results. Accordingly, the modification claimed over the prior art would have been obvious to those skilled in the art at the time of the invention. Continuing now with the discussion of the Kalley reference, Kalley discloses that the LED's may be a single LED, or an array (col. 8, ln. 54). Applicant has amended the claim to include language in which the radiation from the LED is visually distinguishable from the excited luminescent material. However, Applicant has already set forth the limitation that the LED emits in range of 395nm to 415nm, thereby providing the functional limitations of the device. Applicant has not claimed any particular dye compound, but rather a lighting device. Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. See MPEP§2114, citing In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device *is*, not what a device *does*." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528



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(Fed. Cir. 1990). (emphasis in original). Accordingly, the language set forth relating to the dye does not provide an additional functional limitation to the device.

9. Claims 8-11, 17, 18, 27-29 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalley, et al., U.S. Pat. No. 6,590,220 (8 Jul. 2003), in view of Lebens, et al., U.S. Patent No. 6,305,818 (23 Oct., 2001).

10. Referring to Claims 8-10, 17, 18, 27-29 and 31-33, Kalley discloses all of the claimed features, but does not explicitly disclose that the lighting unit contains any particular lens for focusing, or a Fresnel lens. Lebens discloses that a Fresnel lens may be used to provide a focusable light source (col. 6, ln. 66), and thus focal distances would be varied at the discretion of those practicing the invention. Kalley discloses that the light may be used at a variety of distances, such as 5 feet (col. 5, ln. 2), thus the precise focal distance of 5-10 feet as in Claim 10 is clearly within the normal range of distance one would expect from the disclosure of either Kalley, or the combination of Kalley and Lebens. Kalley and Lebens are analogous art, since they are from a similar problem solving area, in that each involves an LED flashlight used to illuminate fluorescent material. For example, Lebens discloses that the light may be used for “general purpose illumination” (col. 2, ln. 5), as well as illuminating fluorescent materials (col. 6, lns. 39-46). See Medtronic, Inc. v. Cardiac Pacemakers, 721 F.2d 1563, 1572-1573, 220 USPQ 97, 103-104 (Fed. Cir., 1983). The motivation for combining the reference would have been to improve the focusing ability of the lighting unit disclosed in Kalley. Accordingly, it would have been obvious to those skilled in the art to combine the references, at the time of the invention, in order to obtain such benefit.

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11. Referring to Claim 11, Lebens does not explicitly disclose that the lens unit is removable, however, Kalley discloses that the optics disposed in front of the LED's (for example, Figure 2, element 4) is removable. Accordingly, the combination of Kalley and Lebens would include a Fresnel lens which is removable. In the alternative, it is implicit in Kalley that the optics disposed in front of the LED's are removable, since virtually all such optics are removable. See MPEP §2144.01.

### *Comments*

12. Applicant has argued in the Remarks to the Amendment dated 20 January 2004 and through the course of the demonstration during the interview of 29 October 2003, that the instant invention has unexpected results over the Kalley reference. The Examiner sincerely appreciates the efforts made by Applicant and Counsel in this regard, however, having carefully considered the arguments and demonstrative evidence presented, such secondary evidence of unexpected results has not been sufficient to overcome the Kalley reference. In this connection, Applicant has argued in the Remarks to the Amendment dated 20 January 2004 that "the dyes typically used in fault testing for air conditioning systems have peak fluorescent response at approximately 440 nanometers ... [such as] those sold by Cliplight Manufacturing ... " (Remarks at pg. 13, first full paragraph). However, Applicant has not provided spectral excitation data to indicate the particular spectral excitation profile of the particular dye used in the demonstration provided on 29 October 2003, nor has a spectral irradiance profile of the particular LED used during the demonstration provided. In the absence of any spectral data,

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Applicant is referred to, for example, Cooper, et al., U.S. Pat. No. 6,165,384 (26 Dec. 2000), which discusses fluorescent dyes used in leak detection, including naphthalimide dyes which are commonly used in air conditioning leak detection (col. 2, lns. 62-64). Figure 5 of the Cooper reference illustrates the excitation profile of naphthalimide dye, wherein the excitation peak appears at approximately 410 nm, and with a range of about 375 nm to 440 nm for higher luminance. Since the peak in a commonly used A/C dye (naphthalimide) appears at about 410 nm, those designing an LED to have peak excitation of such a dye for A/C leak detection would be expected to select an LED with approximately a peak irradiance in this range. Therefore, the selection of an LED, as in the instant invention, with a bandwidth in the range of about 390nm to 415 nm appears to be an expected choice for A/C leak detection using naphthalimide. Moreover, since 410 nm is also in the visible range allowing navigation, such result in the context of irradiating naphthalimide is not unexpected. Accordingly, the secondary evidence has not sufficient to overcome the Kalley reference, thus closing prosecution in the instant Application. Since prosecution is closed, no further secondary evidence may be presented in connection with the instant Application, although such may be considered in a Request for Continued Examination (RCE).

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**CONCLUSION**

13. Applicants' Claims 1, 4, 6-12, 15, 17, 23 and 25-34 are rejected based on the reasons set forth above.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

16. Any inquiries concerning this communication from the Examiner should be directed to Vincent P. Barth, whose telephone number is 571-272-2410, and who may be ordinarily reached from 9:00 a.m. to 5:30 p.m., Monday through Friday. The fax number for the group after final actions is 703-872-9306.

17. If attempts to reach the Examiner prove unsuccessful, the Examiner's supervisor is Frank G. Font, who may be reached at 571-272-2415.

18. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.



Richard A. Rosenberger  
Primary Examiner